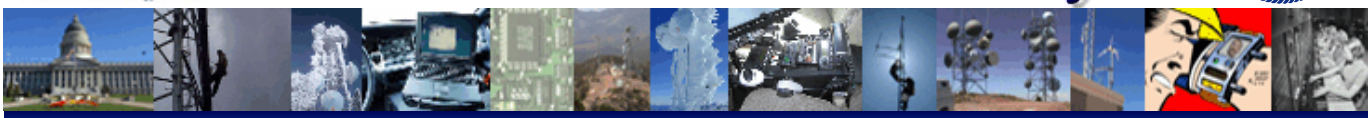
Wireless Services Weekly



May 11, 2005

UWIN - Wireless Ethernet Project Team

By: Tim Cornia, DPS

While our project team has been relatively quiet, people on the team are moving forward with various projects that have the potential to impact the direction of future deployments of 802.11. At the direction of Lynn Mitchell, Lieutenant for the University of Utah Police Department, a project team has been assembled and been tasked with the assignment of deploying an 802.11 solution on the University of Utah campus for use by public safety. People assigned to the project team are Lynn Mitchell, Dave Packham, and Earl Lewis. Public Safety has assigned Tim Cornia, David Miller, and Torrens Arnold to assist them in their endeavor.

In order for the University to get a vision of what 802.11 is capable of, the Department of Public Safety facilitated a meeting between the University of Utah and the Logan City Police Department where the University could see a city-wide deployment of 802.11. A second meeting is planned for May13th, where the University of Utah and Washington County IT staff will meet and discuss what Washington County has deployed as a county-wide solution. By allowing for the University to meet with these agencies' IT staff who have already built city-wide or county-wide solutions, the hope is they can learn from their experiences and take 802.11 to the next level in the University deployment, a level where meshed authentication can be used so that any police agency willing to participate in the proposed solution will be allowed to do so.

If you are interested in participating on the Wireless Ethernet Project Team, please Email tcornia@utah.gov.

NASTD Coming to Salt Lake

By: David Lee, ITS Planning Manager

The State of Utah is hosting the 2005 Western Region Seminar of The National Association of State Telecommunications Directors (NASTD). The seminar runs from June 4-8 at the Salt Lake Hilton hotel. Follow these links for: Preliminary Program, Registration, and Sponsorship.

Generally speaking, NASTD is an association of State CIO's or Technology Directors. Most of the program will consist of reports from other member states of the Western Region, giving all participants the opportunity to learn from their neighbor's experiences.

As outlined in the NASTD Mission Statement:

"NASTD - Technology Professionals Serving State Government, is a member-driven organization whose purpose is to advance and promote the effective use of telecommunications technology and services to improve the operation of state government."

Battery Memory: Fact or Fiction?

By: Doug Chandler

With respect to portable radio batteries, the word 'memory' was originally derived from 'cyclic memory', meaning that a Nickel Cadmium (NiCd) battery can remember how much discharge was required on previous discharges. So if you only use your 10-hour battery for 5 hours each time you pull it from the charger, it will eventually 'remember' that it only has to last for 5 hours. That's overgeneralizing, but it illustrates the basic concept.

Improvements in battery technology have certainly reduced this phenomenon, but it's still very real. What actually happens with your rechargeable nicad battery is that crystalline cadmium hydroxide structures begin to combine, leaving less surface area for the electrolyte to interact with. The microscopic enlargements below illustrate this phenomenon.

New NiCd Cell
The anode is in fresh condition (capacity of 8.1Ah). Hexagonal cadmium hydroxide crystals are about 1 micron in cross section, exposing large surface area to the liquid electrolyte for maximum performance.

Cell with Crystalline Formation
Crystals have grown to an enormous 50 to 100 microns in cross section, concealing large portions of the active material from the electrolyte (capacity of 6.5Ah). Jagged edges and sharp corners may pierce the separator, which can lead to increased self-discharge or electrical short.

Restored Cell
After pulsed charge, the crystals are reduced to 3 to 5 microns, an almost 100% restoration (capacity of 8.0A). Exercise or recondition are needed if the pulse charge alone is not effective.

Figure 1: Crystalline Formation on NiCd Cell
Illustration courtesy of the US Army Electronics Command in Fort Monmouth NJ.

So what can you do to reduce the effects of 'Memory'? I'd love to tell you...but I forgot. (Sorry... couldn't restrain myself.) 'Exercise' is the key. 'Reconditioning' can be done if your battery is beyond exercise redemption.

Exercise
On a monthly basis, drain the battery down to below 1volt/cell. This sounds easier than it is because most newer portable radios will disconnect themselves from battery sources that drop below optimal voltage levels. So just leaving the radio on over the weekend may not be enough, but it's all most of us can manage.

Recondition
Crystalline formations can be reduced, and in many cases reversed, by a slow, deep, repetitive discharge to below 0.6 volts/cell. Special reconditioning devices are expensive, but if your agency is large enough that battery purchases are a serious expense, pulse-charging reconditioners are probably a wise investment.

2005 Trooper Crown Victoria Preparations

By: Gala Dumas, DFSS Fleet Supervisor

First the Equipment Installation

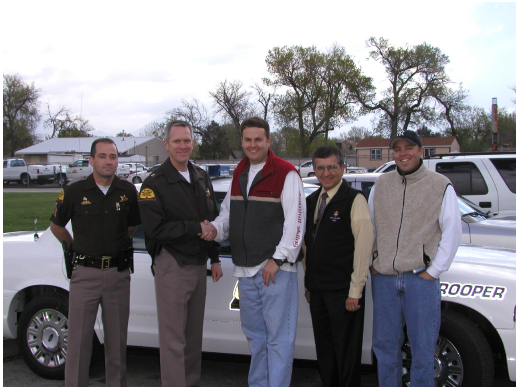
If you follow the link you can read just what professional installation services are available at the Radio Shop, along with contact information. Be sure to visit the Installation Demo on that page for a virtual tour of a UHP Crown Vic. This is a really fun demo, I highly recommend it. (*Caution: Large file; not for slow connections.*)

http://its.utah.gov/productsservices/radioshop/slcradioshop/installation.htm

Then the New Vehicle Issue

When a Trooper comes to the complex to swap his old car out for a new one, we make him jump through a few hoops. They are met by Greg Husband or Joe Gomez of DPS and one of the UHP admin officers to make sure that everything in the new vehicle is just how is should be. Then they oversee the turn-in of the old vehicle.

We surprised Trooper Pyper with a photo session when he came to pick up his new ride a few weeks ago. But he didn't seem to mind…after all he was going to be the one driving home in a new car!



Meet the Install Team

Setting the highest standards of installation professionalism, each member of the ITS Install Team is a certified Mobile Electronics Certified Professional (MECP) graduate.

Installation work is warrantied for the life of the vehicle -regardless of whether the installation was done in-house or by an outsourced vendor.

Loren Lamoreaux, Mike Lindquist, Kirk Rogers, Doug Chandler, Gordy Coles, Travis Sylvester, David Chiodo

Wireless Sensor Networks

By: Boyd Webb, Strategic Network Planner

The idea that a database can be populated with information collected remotely is not new. The Federal Government established a real-time "First Alert" program called SensorNet in early 2003 to discover potential terrorist threats to the US. SensorNet is a cooperative project based at the Oak Ridge National Laboratory, in Tennessee, involving the Department of Homeland Security and NOAA. The Federal project promises to detect nuclear, biological, and chemical threats before an attack can be made.

The interesting thing about SensorNet, however, is the speed at which several technologies are converging with the SensorNet concept. SensorNet continues to evolve and spawn applications that reach into the heart of public safety operations.

Intelligent Freeways, Threat Detection, Automatic Location, and "live" interaction with remote devices, are only the beginning. Wireless SensorNet mobile mesh networking is a rapidly emerging technology that will have a large impact on future operations. Look for much more to come.

Calendar

UWIN Technology Steering Committee
This Friday's meeting has been postponed pending the UWIN Governance Board meeting this Thursday.

UCAN Meeting
Tuesday May 17, 2005
2:00 - 4:00 pm
VECC
5360 South 5885 West
Salt Lake City

911 Committee
Thursday May 19, 2005
10:00am - Noon
Rampton Complex
4501 South 2700 West
UHP Large Conference Room

NASTD Western Region Seminar
Salt Lake Hilton
June 4-8
Conference Link and Agenda

Utah Sheriff's Association 10th Annual Conference and Exposition
St. George Dixie Center
September 11-13
Conference Link

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